

Commonly Used Formulas

$$\text{Pressure in PSI of a Column of Water} = \text{Height of Column in Feet} \times .434$$

$$\text{Wheel RPM} = \frac{1056 \times \text{MPH}}{\text{Circumference}}$$

$$\text{Gallons per Acre (GPA)} = \frac{(\text{GPM} \times 5940)}{(\text{MPH} \times \text{Swath in Inches})}$$

$$\text{Gallons per Minute (GPM)} = \frac{\text{GPA} \times \text{MPH} \times \text{Swath in Inches}}{5940}$$

$$\text{Capacity of a Round Tank in Gallons} = \text{Diameters in Inches Squared} \times \text{Length in Inches} \times .0034$$

$$\text{Capacity of a Rectangular Tank in Gallons} = \text{Length in Inches} \times \text{Width in Inches} \times \text{Height in Inches} \div 231$$

$$\text{Gallons per Foot of Depth} = \text{Diameter in Feet Squared} \times 5.875$$

$$\text{Gallons per Foot of Depth} = \text{Diameter in Inches Squared} \times .0408$$

$$\text{Diameter of Circle} = \text{Circumference} \times .31831$$

$$\text{Circumference of Circle} = \text{Diameter} \times 3.1416$$

$$\text{Area of Circle} = \text{Square of Diameter} \times .7854$$

CONVERSION UNITS

MULTIPLY	BY	TO OBTAIN
PRESSURE		
Atmospheres	14.70	Pounds per Square Inch
Atmospheres	407.14	Inches Water
Inches of Mercury	1.133	Feet of Water
Inches of Mercury	0.4912	Pounds per Square Inch
Inches of Water	0.0735	Inches of Mercury
Inches of Water	5.204	Pounds per Square Foot
Inches of Water	0.0361	Pounds per Square Inch
Inches of Water	0.5781	Pounds per Square Inch
Pounds per Square Inch	0.06804	Atmospheres
Pounds per Square Inch	2.036	Inches of Mercury
Pounds per Square Inch	2.307	Feet of Water
Pounds per Square Inch	27.67	Inches of Water
METRIC		
Atmospheres	1.0332	Kilograms per Square Centimeter
Grams per Square Centimeter	0.0142	Pounds per Square Inch
Kilograms per Square Centimeter	14.22	Pounds per Square Inch
Kilograms per Square Meter	0.2048	Pounds per Square Foot
Pounds per Square Inch	0.7031	Kilograms per Square Centimeter
LENGTH		
Centimeters	0.3937	Inches
Feet	304.8	Millimeters
Feet	30.48	Centimeters
Feet	0.3048	Meters
Inches	25.40	Millimeters
Inches	2.540	Centimeters
Kilometer	0.6214	Miles
Meters	39.37	Inches
Meters	3.281	Feet
Meters	1.094	Yards
Miles (statute)	1609.0	Meters
Miles (nautical)	1853.0	Meters
Yards	91.44	Centimeters
Yards	0.9144	Meters
VOLUME		
Cubic Feet	1728	Cubic Inches
Cubic Feet	7.4805	Gallons (US)
Gallons	0.1337	Cubic Feet
Gallons	231.0	Cubic Inches
Gallons (US)	0.83267	Gallons (Imperial)
Gallons (Imperial)	1.20095	Gallons (US)
METRIC		
Cubic Centimeter	0.06103	Cubic Inch
Cubic Feet	28.316	Liters
Gallons (US)	3.785	Liters
Liters	0.03531	Cubic Feet
Liters	0.2642	Gallons (US)
Liters	1.057	Quarts (US)
Liters	2.113	Pints (US)
Pints (US)	0.4732	Liters
MISCELLANEOUS		
BTU	0.252	Calories
Calories	3.968	BTU
Decitherm	10,000	BTU
Kilogram	2.205	Pounds
Kilowatt Hour	3412	BTU
Ounces	28.35	Grams
Pounds	453.5924	Grams
Pounds	0.4536	Kilograms
Therm	100,000	BTU

FORMULA FOR ACTUAL POUNDS OF NH₃ (NITROGEN) PER HOUR

Use the Formula:

$$\text{Lbs. Nitrogen} \times \text{Swath Feet} \times \text{MPH} \times .1212 = \text{Nitrogen in One Hour}$$

Example:

$$\text{Lbs. of Nitrogen per Acre} = 100$$

$$\text{Swath Width in Feet} = 30$$

$$\text{Tractor Speed (MPH)} = 5$$

$$100 \times 30 \times 5 \times .1212 = 1818 \text{ lbs. per hour}$$

This will be the dial setting at 100# tank pressure in a normal fitting arrangement (12 feet hose x hose valve x 1" QDC x 3' of 1" hose).

$$1 \text{ Acre} = 16.5' \times 2640' \text{ (1/2 mile)}$$

TRAILER/SPREADER CAPACITY

$$27 \text{ Cubic Feet} = 1 \text{ Cubic Yard}$$

Basic Formula - Pounds of Product:

$$\text{Cubic Feet} \times \text{Product Weight (to find what equipment will haul)}$$

$$\text{Cubic Feet} \times \text{Weight of Product} \div 2000 \text{ (ton)}$$

Example:

$$38 \text{ 1/2' Trailer} = 1323 \text{ Cubic Feet (heaped)}$$

$$1323 \times 46\# \text{ (Urea)} = 60858 \div 2000 \text{ (ton)} = 30.42 \text{ Ton Capacity}$$